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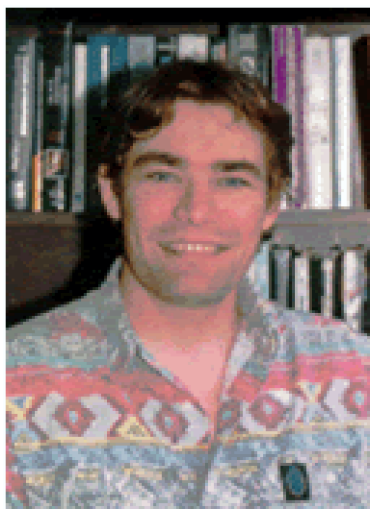

Russell Thompson
Department of Physics and Astronomy
Waterloo Institute for Nanotechnology
University of Waterloo

"Using Theory to Improve Intuition About Polymers at Surfaces"

Tuesday, March 29, 2011
2:00 - 3:00 PM
TA-3, Bldg. 4200, Suite 101, IMMS Conference Room

Abstract: The study of most materials begins with the bulk, but to gain a more practical, less idealized picture, surfaces and interfaces need to be understood. In many materials, such as polymer foams, behaviour can be dominated by surfaces. Although polymers at surfaces have been studied for many decades, many issues remain unresolved while new issues continue to appear through modern experimentation. In this talk, I will sort through some of the confusion using self consistent field theory. I'll talk about issues we've been able to clarify in my group, such as the effect of nanoparticle crystallization on polymer surfaces, and what new predictions are being made, for example nucleation rates in polymer foams. Connections with surface tension experiments will be discussed and I'll speculate on the implications of our results in areas such as nanotechnology, applications such as polymer foams and theories such as classical nucleation theory.

Biography: Russell Thompson is an assistant professor in the Department of Physics and Astronomy of the University of Waterloo, Canada. His research interests include theoretical studies of self-assembly phenomena in block copolymer systems and nanocomposite materials where nanoscale filler particles are added to the polymer matrix to create hybrid materials. He is also interested in applying theory to understand polymer surface structure and polymer surface tension as they relate to polymeric foams. He received his Ph.D. in theoretical condensed matter physics from the University of Western Ontario.

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If you would like to meet with Professor Thompson please contact Debbie Wilke, dwilke@lanl.gov, 663-5621
Hosted by the Institute for Multiscale Materials Studies